

# Thinsulate™

INSULATION

## Hot Water and Industrial Laundry

## Garment Construction Guidelines and Care Instructions

### *Weekend Comfort for the Workday*

Workers shouldn't have to worry about garments that may restrict their freedom or productivity.

Also, uniform and career apparel manufacturers shouldn't be limited to less efficient insulation options for warmth and comfort. Especially when their garments are going to require hot water, or industrial laundering.

That's why 3M can bring you a 25-year legacy of warmth, comfort, and durability in the toughest environments by now offering a Thinsulate™ Insulation product for hot water and industrial laundry needs.

Featuring the exceptional warmth and comfort of other Thinsulate insulations, Thinsulate insulation type G is a 100% polyester insulation with a slightly softer, loftier feel. And because it bears the Thinsulate insulation name, you can expect all of the performance characteristics such as breathability, moisture resistance, and thermal performance. When garments are made in accordance to 3M construction guidelines (see inside), rental laundries that feature apparel using Thinsulate insulation type G in quilted linings are no longer limited by insulation durability, thus helping to extend the "in service" life of a garment...

*not to mention the strength and consistency of the Thinsulate insulation brand and the loyalty that goes along with it.*



# *Easy to Work with, Hard to Beat*

## **Guidelines for General Garment Construction**

Allow 24 hours for recovery of Thinsulate™ Insulation Type G after removal from the vacuum pack.

Thinsulate insulation type G may be quilted using conventional quilting equipment. Spacing of less than 4" is not recommended in order to maintain maximum warmth. Channel or diamond quilts of 4" to 6" are required. *Thorough garment testing is necessary for quilt dimensions outside of the recommended range.*

Fiber migration should be expected with textured fabrics, micro-coated fabrics or taffetas, especially for constructions having less than 86 picks. Applications with textured, coated or waterproof/breathable fabrics may also cause abrasion due to surface friction. All constructions, regardless of pick count should be evaluated for fiber migration.

When using coated, micro-coated, or waterproof/breathable fabrics, the durability of insulations is decreased because of surface friction and because water cannot be flushed through the garment. Durability can be enhanced by providing openings or vents at the bottom of a garment through which water can easily be expelled; this minimizes stress on the insulation during agitation and water extraction. Using a scrim to support the insulation may also enhance durability.

For questions, contact 3M Insulation Products Technical Service at (651) 733-8697.

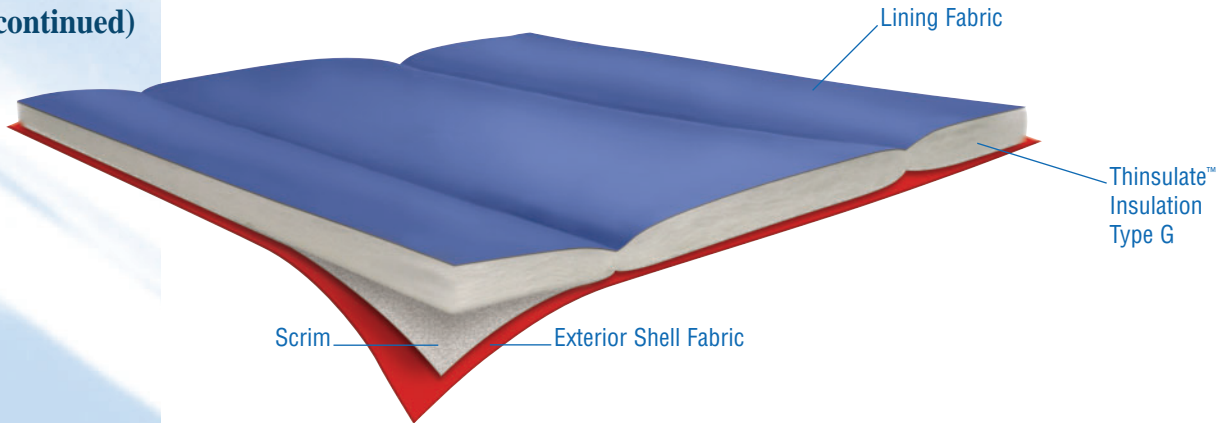
## **Industrial Laundry and Hot Water Home Wash Construction Guidelines**

In addition to the guidelines for general construction, Thinsulate insulation type G in weights of 100 grams or higher may be used in garments requiring industrial laundering or hot water home washing. Due to the extreme wash requirements, it *must* be quilted between the liner and a scrim. Use a diamond or channel quilt pattern with a minimum spacing of 4" to a maximum spacing of 6" (see illustrations). Quilt spacing of less than 4" may require a higher weight of insulation to maintain thermal performance. *Thorough garment testing is necessary for quilt dimensions outside of the recommended range.* A scrim made from polyester or other temperature resistant material is strongly recommended if tunnel finishing or drying above 150°C (300°F).

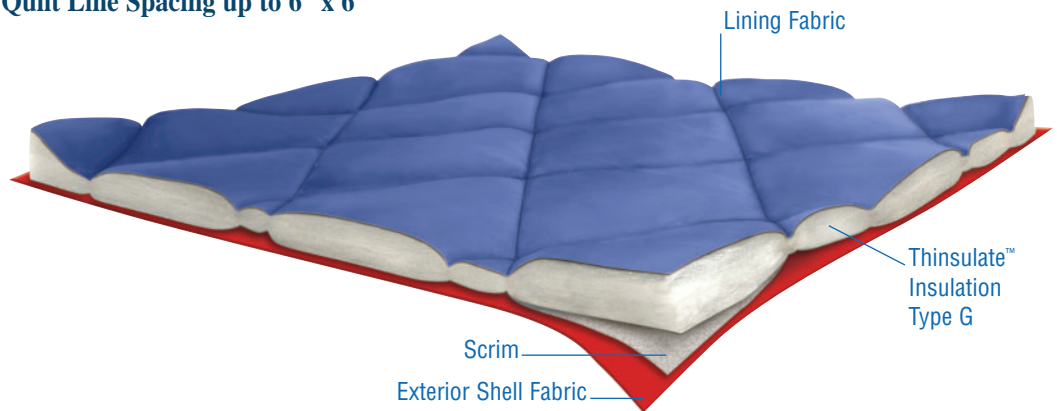
See examples at right of diamond and channel quilt construction.

**Industrial Laundry and  
Hot Water Home Wash  
Construction Guidelines  
(continued)**

**Channel Quilt Construction**  
Quilt Line Spacing up to 4" - 6"



**Diamond Quilt Construction**  
Quilt Line Spacing up to 6" x 6"



**Thinsulate™ Insulation  
Type G Care for Quilted  
Construction with Scrim**

Since outerwear fabric selections vary, it is the apparel manufacturer's responsibility to thoroughly test each garment style to determine the proper care method. This is very important when hot water wash or industrial laundering is required. Care instructions from the garment manufacturer need to be followed to ensure integrity of the overall garment.

For non-quilted constructions or constructions without scrim, different care instructions apply. Please refer to the Thinsulate™ Insulation Garment Manufacturing Construction Guidelines and Care document.

**Thinsulate™ Insulation  
Type G Care for Quilted  
Construction with Scrim  
(continued)**

**Industrial Laundry**

Thinsulate™ Insulation Type G (100 grams or higher quilted between scrim and liner in a 4" to 6" channel or diamond pattern). Industrial wash up to 79°C (175°F). Use only non-chlorine bleach when needed. Tumble dry up to 93°C (200°F) or tunnel finish up to 177°C (350°F). Do not steam press. Steam only or use cool iron. Industrial laundering may reduce loft.

These conclusions were determined through 3M internal test procedures for heavy industrial wash as defined above. Using harsher cleaning conditions can significantly reduce product life. Wash testing is recommended.

**Wash or Dry-Clean**

Thinsulate insulation type G (100 grams or higher quilted between scrim and liner in a 4" to 6" channel or diamond pattern). Machine wash hot up to 79°C (175°F). Use only non-chlorine bleach when needed. Tumble dry high heat up to 93°C (200°F). Do not steam press. Steam only or use cool iron or professionally dry-clean. Dry-cleaning and hot washing may reduce loft.

**Wash Only**

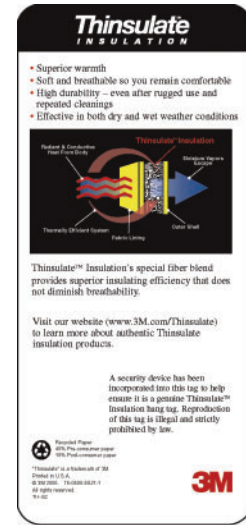
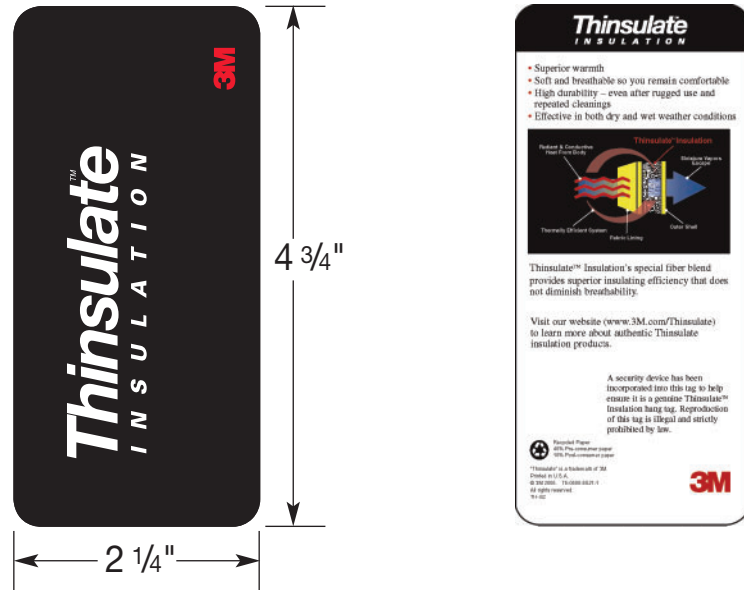
Thinsulate insulation type G (100 grams or higher quilted between scrim and liner in a 4" to 6" channel or diamond pattern). Machine wash hot up to 79°C (175°F). Use only non-chlorine bleach when needed. Tumble dry high heat up to 93°C (200°F). Do not steam press. Steam only or use cool iron. Hot washing may reduce loft.

**Notice to Manufacturer/Specifier**

Thinsulate insulation types GS and GDS are not recommended for industrial laundering or hot water home laundering. The scrim that comes standard on these products is intended for cold or warm water home wash methods and may shrink or melt at extreme drying or finishing temperatures that exceed 150°C (300°F).

## Hang tag, care label, and woven logo policy

3M provides apparel hangtags and woven logos. 3M can also provide wording for your care labels upon request. The apparel hangtag is identified as TH-G2.



## Approved Claims

### Thinsulate™ Insulation Type G:

- Offers superior warmth
- Is soft and breathable so you remain comfortable
- Is highly durable for industrial wash needs when in specified quilted constructions
- Is effective in both dry and wet weather conditions
- Fibers absorb less than 1% of their weight in water and dry easily
- Is certified free of harmful substances to Oeko-Tex Standard 100

### **IMPORTANT NOTICE TO USER:**

**LIMITED WARRANTY:** In the event any Thinsulate™ Insulation is found to be defective in material, workmanship, or not in conformation with any express warranty, 3M's only obligation and your exclusive remedy shall be to replace or refund the purchase price, at 3M's option, of such product upon timely notification thereof and substantiation that the product has been stored, maintained and used in accordance with 3M's written instructions.

**EXCLUSIONS TO WARRANTY: THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHER WARRANTY OF QUALITY, EXCEPT OF TITLE AND AGAINST PATENT INFRINGEMENT.**

**LIMITATION OF LIABILITY:** Except as provided above, 3M shall not be liable in contract or tort for any loss or damage, whether direct, indirect, incidental, special or consequential, (including, without limitation, lost profits, goodwill and business opportunity) arising out of the sale, use or misuse of the product, or the user's inability to use the product. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE.**

Because of the unlimited variety of potential applications for these products, BEFORE production use, the user (which may be a product designer, product specifier, converter or end product manufacturer or others) must determine that the Products are suitable for the intended use and are compatible with other component materials. User is solely responsible for determining the proper amount and placement of Products.

3M may change the product, specifications and availability of the product as improvements are made; therefore, user should contact 3M for latest information before specifying the product. Thinsulate insulation is made within strict dimensional specifications. However, it is possible for the rolls to shift, shrink, or otherwise change dimensions to a maximum of  $\pm 4\%$  during handling or shipment.



**Personal Safety Products  
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Environmental Safety Division**

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